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ABSTRACT

To obtain a test which could be used for the collection, analysis, and interpretation of data on teachers' attitudes toward contemporary educational issues, the Attitudes to Educational Issues instrument (AEI) was developed. Statements were written in five-choice Likert format to express attitudes toward these six educational issues: (1) interdisciplinary approaches; (2) process emphasis as opposed to content emphasis; (3) behaviorist methods; (4) moral and ethical education; (5) theory based teaching; and (6) performance based education. The number of statements was reduced from 66 to 36 after preliminary testing with 265 students in an undergraduate teacher education program. Factor analyses were performed on the final instrument to verify the construction of scales and item selection. Results of the factor analysis reproduced the predefined scales to a reasonable degree. Test-retest reliability coefficients ranged from .67 to .80. Two rather global teacher attitude measures were also administered concurrently with the AEI--the Minnesota Teacher Attitude Inventory (MTAI) and the Education Scale (ES-VII). The correlation matrix of scores for the 265 subjects on the MTAI, ES-VII, and AEI was used as a preliminary indication of the independence of the six scales. Results of the various correlations and factor analyses are attached. (Author/CP)

ATTITUDES TO EDUCATIONAL ISSUES: DEVELOPMENT OF AN INSTRUMENT

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Introduction

The study of attitudes toward educational issues and practices has long been of interest to researchers and educators. Attitude surveys have commonly been developed to serve as a means of selecting good teachers on the basis of prior assumptions about good teaching (Leeds, 1950) or as a means of distinquishing teachers judged to be effective from those judged to be ineffective (Kerlinger and Pedhazur, 1967). In both cases the pattern of inference is clear; people with certain desirable attitudes do certain desirable things. That is, action tendencies are included as an integral part of the definition of attitude. However, Shaw and Wright (1967) propose a definition of attitude which differs from the more traditional definitions in that the "enduring system of evaluative, affective reactions (p. 3)" does not include action tendencies. They argue that action tendencies, although they relate logically to attitude, should be observed separately and related empirically. In addition this definition corresponds closely to the way in which attitudes are commonly measured.

Purpose

The purpose of the current study was to develop an instrument, *Attitudes to Educational Issues* (AEI), which could be used to study attitudes in pre-service and in-service teachers toward contemporary educational issues. Currently available instruments, predominantly the *Minnesota Teacher Attitude Inventory* (MTAI) and the *Education Scale* (ES-VII), provide rather global measures of attitudes toward educational practices and do not address current issues of concern to educators. In the development of the AEI no *a priori* assumptions were made concerning characteristics of good or effective teachers.

Development of the Instrument

The literature abounds with controversial issues in education. Six such issues were selected for inclusion in the AEI and determined six scales. The six issues -- interdisciplinary approaches (IN), process emphasis as opposed to content emphasis (PR), behaviorist methods (BE), moral and ethical education (PO), theory-based teaching (TH), performance-based education (TE) -- were chosen because they are relatively universal and because they raise questions which have far-reaching implications for the future of education.

A set of from 10 to 14 items was developed for each of the six scales. Existing inventories (Kerlinger and Pedhazur, 1967;

Leeds, 1950; Wehling and Charters, 1969) were consulting during the writing of items. Each set of items contained equal numbers of statements representing opposing views on the educational issue concerned. The 66 statements were randomly arranged to form the preliminary instrument (X-1) with a five-choice Likert format. Examples of statements from each scale follow:

IN: Each subject should be taught in such a way that its connections to other subjects are made clear to students.

PR: It is essential that a teacher cover all the material in the syllabus.

BE: Teachers should plan to systematically modify the behavior of their students.

PO: It would be a mistake to involve the schools in teaching students specific ethical principles.

TH: It is a waste of time to study psychological theories.

TE: Students in teacher education programs should be evaluated only by their performance with pupils in the school setting.

The preliminary version of the AEI was administered to a sample of 269 students in the undergraduate teacher education program at Brooklyn College, CUNY in May, 1975. There were

142 males and 127 females; 223 of the subjects were 25 years old or less, while 46 of the subjects were over 25. Students were majors in liberal and fine arts, social and physical sciences, and physical education with minors in education. At the same time the MTAI and ES-VII were also administered. After a period of two weeks the AEI was again administered to a sample of 41 students. This was used to gather test-retest reliability data for the 66 items. Each item was scored from five to one with five the most favorable and one the most unfavorable. Scale scores were the sums of the scores for the items in each scale. Table 1 presents the ranges for item-scale correlations and item reliabilities for each of the six scales.

Insert Table 1 about here

The revised version of the AEI (X-2) was constructed from the preliminary version (X-1) by selecting six items from each of the original item sets. The follow criteria, in order of importance, were used to select the items for each of the six scales: high item reliability, high item-scale correlation, low inter-item correlations, balance of statements supporting opposing views. The item-scale correlations and item reliabilities of the 36 items chosen are presented in Table 1. Average inter-item correlations for the resulting six-item scales were:

IN - .25, PR - .13, BE - .23, PO - .31, TH - .19, TE - .14. Scale scores were redetermined from the 36-item form and item-scale correlations were calculated. The ranges of item-scale correlations were: IN - .54 to .66, PR - .41 to .57, BE - .36 to .76, PO - .54 to .75, TH - .42 to .65, TE - .36 to .64. Of the 36 statements, 19 represented views supportive of the respective issue while 17 represented views opposed to the respective issue. Each scale contained at least two statements of each type.

The correlation matrix of scores for the 265 subjects on the MTAI, ES-VII, and AEI (X-2) appears in Table 2. This matrix was used as a preliminary indication of the independence

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Insert Table 2 about here

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of the six scales. It will also be used to explore the relationship of the AEI to the MTAI and ES-VII and to explore the relationship of the six scales of the AEI to one another.

Validity and Reliability

Both orthogonal and oblique factor analyses were performed on the scores from the 265 AEI (X-2) surveys. The purpose of factor analysis was to verify the construction of scales and

and selection of items. Six factors were forced in each analysis. Table 3 presents the results of the factor analysis with orthogonal rotation. Factors were named after the set of items which loaded highest on that factor. Of the 36 items, 28 had

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Insert Table 3 about here

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loadings at least as high on the factor named for the scale they were intended to measure as on any other factor. Four scales contained at least five such items; PR and TE contained four. Table 4 presents the results of the factor analysis with

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Insert Table 4 about here

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oblique rotation. Results were similar to those for the orthogonal rotation. The factor correlation matrix, see Table 5, provided for a comparision of the relationship between factors with the relationship between *a priori* defined scales. The biggest

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Insert Table 5 about here

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discrepancy was between respective IN-PR relationships. Since the factor analysis did not mirror the *a priori* structure some differences in the two structures was inevitable.

In addition to the 41 test-retest subjects used for the original determination of the item reliabilities, another sample of 56 subjects was tested and retested with the AEI (X-2). This yielded data for establishing test-retest reliabilities for the six scale scores (N=97). The resulting reliabilities were: IN - .80, PR - .71, BE - .72, PO - .76, TH - .75, TE - .67.

Summary

The desire to obtain an instrument which could be used for the collection, analyses, and interpretation of data on attitudes to educational issues of pre-service and in-service teachers led to the development of the AEI described above. Statements were written to express attitudes to six educational issues. The number of statements was reduced on the basis of preliminary testing with 265 students in an undergraduate teacher training program. Factor analyses were performed on the final 36-item instrument. Results of the factor analysis reproduced the predefined scales to a reasonable degree. Test-retest reliability coefficients ranged from .67 to .80. The AEI is currently being used to attitudes and attitude change among pre-service and in-service teachers.

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Table 1

Item-Scale Correlations (N=265) and Item Reliabilities (N=41) for Preliminary Version of AEI

Factor	All Items			Items Chosen		
	Number of Items	Item-Scale Correlations	Item Reliabilities	Number of Items	Item-Scale Correlations	Item Reliabilities
IN	14	.36 to .59	.29 to .77	6	.36 to .59	.48 to .77
PR	12	-.14 to .53	.14 to .73	6	.35 to .53	.46 to .73
BE	10	.26 to .67	-.14 to .73	6	.30 to .67	.47 to .73
PO	10	.44 to .65	.27 to .77	6	.50 to .65	.48 to .77
TH	10	.34 to .63	.32 to .60	6	.34 to .62	.41 to .60
TE	10	.25 to .59	.12 to .45	6	.38 to .59	.30 to .45
	66	-.14 to .67	-.14 to .77	36	.30 to .67	.30 to .77

Table 2

Correlation Matrix for MTAI, ES-VII and AEI Scales (N=265)

	Survey or Scale								
	MTAI	ES-VIIA	ES-VIIB	IN	PR	BE	PO	TH	TE
MTAI*	-	.39	-.59	.32	.40	-.13	-.02	.20	-.06
ES-VIIA**		-	-.10	.47	.31	.10	.26	.29	-.02
ES-VIIB			-	-.10	-.43	.27	.24	.01	-.07
IN				-	.33	.09	.28	.35	-.08
PR					-	-.15	-.06	.19	.04
BE						-	.39	.20	-.05
PO							-	.37	-.20
TH								-	-.34
TE									-

*N = 254 for correlations with ES-VII and N = 257 for correlations with AEI scales.

**N = 262 for other correlations with ES-VII.

Table 3

Results of Factor Analysis with Orthogonal Rotation

Scale	Item	Factor					
		IN	PR	BE	PO	TH	TE
IN	1.	+				+	
	9.	+	++				
	14.	++				+	
	19.	+++					
	26.	+++					
	36.	+	+				
PR	2.		++				
	7.	++	+				
	15.		+				
	24.		+				+
	30.	+				+	
	35.		++				-
BE	6.		-	+	+		
	11.			+			
	16.					+	-
	20.			+++			
	25.			+++			
	31.			++			
PO	3.				+++		
	10.				+	++	
	18.				+++		
	23.		-		+		
	29.				++	++	
	32.				+++		
TH	4.						-
	8.					+	-
	13.					++	
	21.					++	-
	27.	+			+	+	-
	34.					++	
TE	5.	-	++				
	12.						
	17.					-	++
	22.						++
	28.		++				
	33.						++

Note: The symbol "+" indicates a loading between .20 and .39; "++" indicates a loading between .40 and .59; "+++" indicates a loading between .60 and .79; "-" indicates a loading between -.20 and -.39.

Table 4

Results of Factor Analysis with Oblique Rotation

Scale	Item	Factor IN	PR	BE	PO	TH	TE
IN	1.	++			+	+	
	9.	+	++				
	14.	++			+	++	
	19.	+++			+	+	
	26.	++				+	
	36.	+	+		+	+	
PR	2.		++				
	7.	++	+				
	15.		+				
	24.	+	+	-			
	30.	+				+	
	35.		++				-
BE	6.		-	+	+		
	11.			+			
	16.				+	++	-
	20.			+++			
	25.			+++	+		
	31.			++	+		
PO	3.				+++	+	
	10.				++	++	
	18.				+++	+	
	23.		-	+	+		
	29.				++	++	
	32.			+	+++	+	
TH	4.						
	8.				+	++	
	13.					++	
	21.				+	++	
	27.	+			+	++	
	34.					++	
TE	5.	-	++				
	12.						
	17.					--	++
	22.				-	-	++
	28.		++				
	33.					-	++

Note: The symbol "+" indicates a loading between .20 and .39; "++" indicates a loading between .40 and .59; "+++" indicates a loading between .60 and .79; "-" indicates a loading between -.20 and -.39; "--" indicates a loading between -.40 and -.59.

Table 5

Factor Correlation Matrix

	Factor					
	IN	PR	BE	PO	TH	TE
IN	-	.08	-.01	.13	.23	.05
PR		-	-.08	-.12	.08	-.06
BE			-	.24	.02	-.01
PO				-	.37	-.09
TH					-	-.18
TE						-